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## A PRELIMINARY LIST OF THE MOSQUITOES OF MAINE

### (CULICIDAE DIPTERA)

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This paper presents a list of the mosquitoes of Maine and the localities from which the author has records. Previously published records are included if adding to distribution. The distribution of *Aedes canadensis*, *A. communis*, *A. excrucians*, *A. fitchii*, *A. intrudens* and *Mansonia perturbans*, because of the large number of records, has been listed by counties only with the earliest and latest collection dates given. This list contains thirty-six species of which *Chaoborus punctipennis*, *Anopheles walkeri*, *Aedes implacabilis*, *Culex salinarius*, *Culiseta melanura* and *Culiseta morsitans* are apparently new records for the state, and the known distribution of previously reported species is extended. Material of nearly all of the species listed has been determined by Dr. A. Stone, U. S. Bureau of Entomology and Plant Quarantine. This study was based upon a total collection of approximately 935 larvae and 3191 adults. These specimens were collected by: Maine Forest Service (1944-45) in cooperation with the boys and girls summer camps during a mosquito survey, 1650 specimens; United States Army, First Service Command, 1250 specimens, and the records made available to the author by Captain Harry H. Laidlaw, Jr., Entomologist at the laboratory in Jamaica Plain, Mass. All others were collected by the author and specimens of each species, except those preceded by an asterisk, are represented in his collection. The dates given are for the adults except where recorded as for larvae. First Service Command records are denoted by F.S.C. The names used are those employed by Matheson (1944).

1. \**Eucorethra underwoodi* Underwood. Published records: Ft. Kent, Aug. 18; Penobscot Co.; Mt. Desert, July 10, 21; Machias, July (larvae) (7). Poland Springs, May 15 (4).

2. \**Chaoborus americanus* (Johannsen). Published record: Southwest Harbor, July 13 (as *crystallina* (DeGeer) (7).

3. *Chaoborus nyblaei* Zetterstedt. Augusta, May 10, June 7 (larvae). Published record: Bar Harbor, Sept. 11 (7). Numerous larvae of this species were collected in a large woodland pool under mixed conifers and hardwoods. Several collections made around the pool failed to show the presence of culicine larvae although adult *Aedes* were plentiful.

4. *Chaoborus punctipennis* (Say). Augusta, July 19; Oquossoc, July 6-18; Wilton, July 20 (Determinations by J. Bean). This species was distinguished from *americanus* and *flavicans* by its dark blotched or spotted wings, femora and tibiae; and by the distinctive subapical lobes on the side pieces in the male genitalia; and from *nyblaei* by the latter and smaller size.

5. *Anopheles occidentalis* Dyar and Knab. (*maculipennis* of authors). West Outlet, Moosehead Lake, June 27; Winthrop, July 20, Aug. 11; Wilton, July 25; Danville, July 4; Raymond, July 6; Denmark, Aug. 15; South Casco, Aug. 2; Bar Harbor, April 19. Published records: Weld, July 25; Norcross, July; Mt. Desert, June 20; Oquossoc, June 30; South Portland, May (7). Aroostook Co., May 25-30 (8).

6. *Anopheles punctipennis* (Say). Augusta, Jan. 18 (in house), Aug. 23, Nov. 11 (in house); Camden, April 30. F.S.C. record: Portland, Oct. 22 (adults and larvae). Published records: Weld; Telos Lake (1). Presque Isle, May 8 (8). Orono, July 27, Oct. 1 (11).

7. *Anopheles quadrimaculatus* Say. F.S.C. record: Portland, Oct. 22. Published records: Southwestern Maine (7). Orono, Sept. 20 (11).

8. *Anopheles walkeri* Theobald. Rangeley, July 13, Aug. 29; Raymond, July 6 (Determinations by A. Stone). This species may be separated by the entirely dark wings and narrow, dull, silvery-white apical rings to the palpal segments.

9. *Aedes atropalpus* (Coquillett). Bar Harbor, Aug. 8, 29; Georgetown, July 24. F.S.C. record: Ft. Levett, Portland, Sept. 25. Published records: Orono (6). Stillwater branch of the Penobscot River, Sept. 22 (5).

10. *Aedes aurifer* (Coquillett). Augusta, July 21; Harrison, June 8; Raymond, July 1, 6; Topsham, Sept. 26. F.S.C. record: Portland, July 17, 18. Published record: Mt. Desert (7).

11. *Aedes canadensis* (Theobald). Hancock Co., June 22 to Aug. 10; Kennebec Co., May 29 to July 11; Waldo Co., July 16; Androscoggin Co., July 4; Franklin Co., June 16 to July 26; Oxford Co., July 2 to Aug. 15; Sagadahoc Co., Sept. 26; Cumberland Co., June 8 to Sept. 6. F. S. C., sixteen larval records, Portland and vicinity, April 16 to July 8. One large larva was collected Nov. 28. Published records: Mt. Katahdin (7). Aroostook Co., May 25, Aug. 17 (8).

12. *Aedes cantator* (Coquillett). Collected and determined by F.S.C., nine larval records, Portland and vicinity, April 16 to Sept. 28, and four adult records, same locality, July 8 to Oct. 25. Published records: Washington Co.: Mt. Desert; Southwestern Maine (7).

13. *Aedes cinereus* Meigen. 4R3, Rangeley, Aug. 10; Eustis, June 4; Oquossoc, July 6; Danville, July 4, 28, 29; Harrison, June 9, July 18; Raymond, July 1; South Casco, Aug. 2; Bar Harbor, Aug. 12, 22. F.S.C., eight larval records, Portland and vicinity, April 16 to July 8, and four Nov. 6 to 28. Published records: Moosehead Lake (7). Brunswick, June 21; Harrington, Aug. 8; Orono, June 9, 13, July 27 (8).

14. *Aedes communis* (DeGeer). Penobscot Co., July 2 to 5; Piscataquis Co., June 15 to 28; Washington Co., June 12; Hancock Co., May 16 to Aug. 22; Waldo Co., July 16; Kennebec Co., May 23 to 25; Androscoggin Co., July 28; Franklin Co., June 4 to 28; Oxford Co., May 17 to July 13; Cumberland Co., June 8 to July 18; York Co., May 17.

15. *Aedes dianiaus* Howard, Dyar and Knab. Augusta, July 6; Island Falls, June 17. Published record: Mt. Desert, July 7-25 (7).

16. *Aedes excrucians* (Walker). Aroostook Co., June 17 to July 16; Penobscot Co., July 2 to 11; Hancock Co., Aug. 10 to 22; Waldo Co., July 19-20; Kennebec Co., July 2 to 29; Androscoggin Co., July 4 to 29; Oxford Co., July 10 to Aug. 15; Sagadahoc Co., Sept. 26; Cumberland Co., June 8 to Aug. 2.

17. *Aedes fitchii* (Felt and Young). Aroostook Co., June 15-17; Penobscot Co., July 2; Waldo Co., July 19; Kennebec Co., June 20 to Aug. 11; Androscoggin Co., July 4; Oxford Co., Aug. 7; Sagadahoc Co., July 24 to Sept. 26; Cumberland Co., June 8 to July 19. Published records: Washington Co.: Mt. Desert (7).

18. *Aedes implacabilis* (Walker). Collected and determined by F.S.C., Ft. Williams, June 5; Two Light, Portland, June 8 (adults and larvae); Ft. McKinley, Portland, June 8; Jewell Island, April 17 (larvae); June 8 (adults and larvae); Portland, July 18. I have checked some of the larvae from Jewell Island.

19. *Aedes intrudens* Dyar. Aroostook Co., June 8; Piscataquis Co., June 15 to 30; Somerset Co., June; Penobscot Co., July 2 to 6; Washington Co., June 12; Hancock Co., June 10; Waldo Co., July 19; Kennebec Co., May 25 to Oct. 5; Androscoggin Co., July 4 to 29; Franklin Co., June 7 to Aug. 10; Oxford Co., July 1 to 9; Cumberland Co., June 8 to Sept. 6.

20. *Aedes punctor* (Kirby). Ashland, June 29; Kokadjo, June 15; Greenville, June 30; East Eddington, July 4; Princeton, June 12; Augusta, July 16; Rangeley, June 28; Weld, June 16; Danville, July 4; Raymond, July 1-6;

Winthrop, May 30, July 12. F.S.C. record: Jewell Island. Published records: Sorrento, July 2 (2). Washington Co.; Mt. Desert (7).

21. *Aedes sollicitans* (Walker). Augusta, Aug. 5; Southwest Harbor, June 21, July 26. F.S.C. record: Portland, July 17. Published records: Brunswick, June 21; Harrington, Aug. 8; Wells, Aug. 3 (8). Trenton, Aug. 10 (11).

22. *Aedes sticticus* (Meigen). Eustis, June 4; Rangeley, Aug. 11; 4R3, Rangeley, Aug. 10; Richardson Lake, Rangeley, Aug. 11; Kezar Falls, July 10, 11; Denmark, July 13, 14; East Waterboro, July 31. F.S.C. record: Portland, July 19. Published record: Mt. Desert (7).

23. *Aedes stimulans* (Walker). Houlton, May 24; Island Falls, June 15; East Eddington, July 2, 7; Bar Harbor, Aug. 22; North Belgrade, July 6; Winthrop, July 11, 25; Danville, July 4, 28; Fryeburg, Aug. 7; Kezar Falls, July 12; Harrison, June 9; Denmark, July 14. F.S.C. records: Ft. McKinley, Portland; Morse Mt. Published records: Washington Co. (7). Orono (6). Brunswick, June 21 (8).

24. *Aedes trichurus* (Dyar). Island Falls, June 15; East Eddington, July 2, 7; Princeton, June 12; Augusta, May 20; Winthrop, July 10; Danville, July 4, 11; Parsonsfield, May 17; Harrison, June 8; Raymond, July 1, 6; Denmark, July 11. Published records: Aroostook Co., May 25-30; Orono, June 13 (8).

25. *Aedes triseriatus* (Say). East Eddington, July 2; Readfield, Aug. 12; Wilton, July 10-17, 23; Clifton, July 18. F. S. C. records: Ft. McKinley, Portland; Cousins Island. Published record: Moosehead Lake (7).

26. *\*Aedes trivittatus* (Coquillett). Published record: Paris Sept. 3 (7).

27. *Aedes vexans* (Meigen). Island Falls, June 15; East Eddington, July 10; Bar Harbor, Sept. 20, Oct. 7; Southwest Harbor, May 25, Sept. 4; Wilton, July 15; Danville, July 28; Harrison, July 18; South Casco, Aug. 12. F. S. C. records, Portland and vicinity, June 19 to Sept. 25; twelve larval records, same locality, May 17 to Nov. 21. Published records: Harrington, Aug. 8 (8). Trenton, Aug. 10 (11).

28. *Culex apicalis* Adams. Augusta, Jan. 2; April 26; Bar Harbor, April 23; East Waterboro, Aug. 30 (larvae). F. S. C., larval records, Portland and vicinity, July 17 to Nov. 21. Published record: Orono, Dec. 17, 21 (5).

29. *Culex pipiens* Linnaeus. Augusta, Feb. 21 to Nov. 16. F. S. C., larval records, Portland and vicinity, June 25 to Nov. 23. Published record: Orono, Aug. 4, 8 (8).

30. *Culex restuans* Theobald. Augusta, Jan. 3, May 20; Bar Harbor, Aug. 31; Bridgton, Sept. 21 (larvae). F. S. C., larval records, Portland and vicinity, Sept. 5 to Oct. 22. Published records: Telos Lake (1). Southwestern Maine (7). Southern Penobscot Co., Oct. 9 (8).

31. *Culex salinarius* Coquillett. Collected and determined by F. S. C., Portland, Sept. 6 (adults and larvae), Oct. 22 (adults and larvae), 25 (larvae); Peak Island, June 25 (larvae), Sept. 28 (larvae), Nov. 23 (larvae); Jewell Island, Nov. 21 (larvae). I have checked some of the larvae from the vicinity of Portland.

32. *Culiseta impatiens* (Walker). East Eddington, July 1-3; Augusta, May 4; Bar Harbor, April 30, May 1, 4; Rangeley, June 28. F. S. C. record: Portland, July 19 (larva). Published records: Telos Lake (1). Ft. Kent, Aug. 20; Penobscot Co.; Waterville, May 11; Weld, Aug. (7).

33. *\*Culiseta melanura* (Coquillett). Collected and determined by F. S. C., Portland, Oct. 25 (larvae); Jewell Island, Nov. 21 (larvae). I have not seen this species.

34. *Culiseta morsitans* (Theobald). Augusta, July 6 (Determined by J. Bean). Collected and determined by F. S. C., Portland, July 8 (larvae); Ft. McKinley, Portland, July 8 (larvae).

35. *Mansonia perturbans* (Walker). Aroostook Co., Sept. 3; Piscataquis Co., June 15-28; Penobscot Co., July 1 to 24; Waldo Co., July 16 to 20; Washington Co., July 11; Kennebec Co., June 2 to Aug. 11; Franklin Co., June 16 to

July 6; Oxford Co., July 10; York Co., July 10; Cumberland Co., July 1 to Aug. 2.  
36. \**Wyeomyia smithii* (Coquillett). Published record: Mt. Desert (7).

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# NEW NORTH AMERICAN PHALAEINIDAE WITH NOTES (LEPIDOPTERA) \*

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## *Euxoa leucopterota* n. sp.

*Male*. Closely allied to *difformis* Sm., especially to the paler colored forms of this variable species. Antennae strongly serrate and fasciculate as in *difformis*. Thoracic vestiture rather rough, composed of scales and hair, light smoky gray. Primaries pale smoky, with a slightly grayer tinge than is usually found in *difformis*. Maculation similar to that of *difformis* but scarcely as distinct, the crosslines being less contrastingly dark and the spots less distinctly outlined. The main difference occurs in the secondaries which are *entirely pearly white* with no traces of the postmedian line and subterminal smoky shade found in *difformis*. Expanse 30 mm.

In the male genitalia certain differences occur which lead me to the belief that the species is distinct from *difformis*. The clasper bulges more at base of costa, is rather broader and with less oblique terminal margin to cucullus. In the harpe the costal fork is strongly and evenly *outwardly rounded* at base whilst the ventral fork is straight and *considerably longer than the costal one*; in *difformis* the reverse is the case, the ventral fork being the shorter and the costal one long and weakly sinuate, the width between the two prongs at base being decidedly less than in the present species. The juxta is broader and chunkier than that of *difformis*.

*Holotype* — ♂, Taft, Calif., Oct. 10, 1942; No. 5653 in the Canadian National Collection, Ottawa.

## *Euxoa simulata* n. sp.

*Male*. Very similar in coloration and maculation to *terrena* Sm. and practically indistinguishable from the less intensively dark forms of this species except by characters of the male genitalia. The color of primaries is possibly slightly smokier with less tendency to the brown tinge found in many *terrena*

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specimens, notably those from Utah. The ordinary lines and spots are well developed as in *terrena*, the median shade forming a fairly evident dark blotch between orbicular and reniform. The pale s.t. line is well emphasized by the preceding dark arrow-marks. A pale ochreous line at base of the dark fringes is rather more evident than in *terrena*. The secondaries are less evenly smoky brown than in *terrena*, the basal two-thirds being light smoky, contrasting somewhat with a broad, dark smoky, terminal band. Beneath much as in *terrena* but the veins in the terminal area show traces of pale streaking. Expanse, Holotype 35 mm.; paratype 30 mm.

In the genitalia the differences are marked. In *terrena*, among other things the clasper has a strongly convex costal margin at base narrowing toward cucullus, the ventral angle of which is gently rounded; in the present species the clasper shows *parallel margins* with squarely cut ventral angle to cucullus. The sacculus in *terrena* has a very strongly bulging costal margin, rather reminiscent of certain *Scotogramma* species, whilst in *simulata* the sacculus is rather broad and chunky but of *even width* throughout. In *terrena* the ventral prong of the harpe is twisted giving a quite characteristic and abnormal appearance to this section whilst in the present species the fork is more normal, strongly U-shaped, the dorsal arm excurved or convex, the ventral arm slightly longer and straight, being a little shorter on the left clasper than on the right one. The vinculum is much shorter than the abnormally long one of *terrena* and the rather chunky aedeagus entirely lacks the basal broadening of this species. The juxta is small and shows considerable similarity of that of *ternaria* from which the whole organ differs in the broader and shorter sacculus.

*Holotype*— ♂, Nelson Cr., Plumas Co., Calif., Aug. 25, 1940 (W. R. Bauer); No. 5652 in the Canadian National Collection, Ottawa.

*Paratype*— ♂, Mt. Hood, Ore., 16 Aug. 1939 (E. C. Johnston).

The paratype is somewhat smaller and paler than the holotype but agrees otherwise in all essentials.

#### ***Euxoa johnstoni* n. sp.**

*Male*. Antennae finely serrate and fasciculate. Palpi heavily suffused with smoky on outer side, ochreous inwardly. Vestiture of head and thorax composed of fine scales and scale-like hairs, rather rough, the color (similar to that of primaries) being a rather deep smoky gray with a slight luteous tinge; collar with scarcely a trace of dark cross-banding. Primaries quite evenly smoky gray with faint luteous tinge and with very slight dark sprinkling. Cross-lines evident but not strongly marked, geminate, blackish, filled with ground-color, the inner half of t.a. and the outer half of t.p. lines more or less obsolete, t.a. line slightly outcurved in interspaces but *without prominent projection* above inner margin. Median shade strong, blackish, irregular, outwardly oblique from mid-costa to a point on vein 3 *quite close to t.p. line*, then parallel to same and irregularly dentate to inner margin. Orbicular and claviform obsolescent, the former faintly perceptible in certain lights as a small pale ring; reniform indicated by a smoky lunate shade, not very obvious. S.t. line irregular, pale ochreous, relieved by a strong, preceding smoky shade which tends to form, in central section, inwardly directed arrow-marks. Terminal area tinged with smoky and with a faint series of blackish lunules along outer margin. Fringes pale smoky with a fine ochreous line at base, followed by a broader smoky band. Secondaries rather evenly smoky brown, slightly paler basally; a small obscure dark discal spot is present. Fringes pale with smoky basal band.

*Female*. Larger and somewhat more obscurely maculate than the male.

Beneath powdered with smoky over a pale ochreous ground with paler terminal area on primaries and mere indications of discal spot and postmedian dark line. Secondaries lighter than primaries with discal dot and postmedian line well-defined and some smoky shading along outer margin. Expanse, ♂ 30 mm.; ♀ 34 mm.



On genitalic characters and general type of maculation belongs evidently in the difficult *quinquelinea-lutulenta* group. The antennae, however, are more finely serrate than in *lutulenta* and in this respect more as in *ternaria* Sm. In maculation the t.a. line does not show the 'long outcurve below internal vein' mentioned by Smith in his description of *lutulenta*. The median shade is more outwardly oblique in costal section and runs closer to t.p. line for a greater length below vein 3 and the reniform shows no trace of the 'yellowish curved line', forming the 'outer margining line'. The size also would appear to be smaller. In the male genitalia the sacculus is narrow and even in width, as in *lutulenta*; the clasper is very similar but the ventro-apical edge of the cucullus is decidedly more rounded and less squarely cut. The harpes are symmetrical and the two prongs form a broad U and are nearly of equal length, whereas in *lutulenta* the ventral prong is decidedly the longer on both sides. The juxta is noticeably broadened in its basal half, the lateral edges in this section being outwardly curved, whereas in *lutulenta* they run parallel to each other for their entire length. The female genitalia are similar to those of other group members with the ductus bursae entering on the right side of the bursa and the ductus seminalis originating in a bulge of the bursa on the left side, proximally.

*Holotype*—♂, Mt. Hood, Ore., Aug. 16, 1939 (E. C. Johnston); No. 5651 in the Canadian National Collection, Ottawa.

*Allotype*—♀, same data.

#### *Euxoa altens* n. sp.

Belongs according to genitalia in the *colata* group in which in the male genitalia the ventral branch of the harpe is much shorter than the costal one and in the female organ the bursa is boomerang-shaped, the proximal half being curved strongly to the left with a consequent invagination of the left margin in the mid-section. In the present species the ventral branch of the harpe is extremely short and pointed, scarcely one-third as long as in *colata*; in the female genitalia the proximal half of the bursa is evenly and strongly curved to the left, the apex pointing downward, and the ductus seminalis, arising at this point, is consequently longer than in *colata* and *macleani* and possibly closest to that of *dissona*.

Male antennae finely serrate and fasciculate. Squamation of head, palpi and thorax rather rough, deep smoky gray, with many of the scales in collar and thorax tipped with white, giving a somewhat peppered appearance; collar with traces of a black cross-band, below which certain of the scales show rather characteristic tinges of bright brown, this feature also occurring in the scaling of the patagia. Primaries smoky brown with very obscure maculation. Cross-lines geminate, deep smoky, the t.a. line best indicated, slightly outwardly oblique and very feebly outcurved in the interspaces; t.p. largely indicated by the obscure inner portion of the geminate line followed by a shade slightly paler than the ground color. Orbicular small, circular, outlined in black with smoky gray filling; reniform upright, weakly kidney-shaped, also outlined in black and filled with smoky gray with a central darker shade. S.t. obscurely indicated by an irregular, pale, broken line central darker shade. S.t. obscurely indicated by an irregular, pale, broken line preceded by darker shading. A weak terminal series of black lunules. Fringes concolorous with a fine, pale, basal line followed by a deeper smoky band. Secondaries deep smoky brown with smoky discal dot; fringes smoky in inner half with a fine, pale, basal line, outwardly whitish. Beneath light smoky with small discal dot on secondaries and (in the female) traces of a dark postmedian line. Fringes much as above. Expanse, ♂ 32 mm.; ♀ 35 mm.

*Holotype*—♂, Mt. Hood, Ore., Aug. 16, 1939 (E. C. Johnston); No. 5654 in the Canadian National Collection, Ottawa.

*Allotype*—♀, same data.

#### *Agrotis orthogonoides* n. sp.

Closely allied to *orthogonia* Morr. but differing in smaller size, much darkened median area and especially in the much more inwardly oblique t.p. line between cell and inner margin. Palpi, head, antennae and thoracic vestiture much

as in *orthogonia*. Primaries a light smoky clay-color with the median space, except for a small area between inner margin and claviform, strongly suffused with smoky, making this area contrastingly dark as compared with the remainder of the wing. T.a. line upright, somewhat irregular, smoky. Claviform large, filled with smoky and outlined in a somewhat darker shade, extending nearly across the median space with the apex much closer to t.p. line than is the case in *orthogonia*. Orbicular and reniform practically entirely obscured by the dark median shading which, however, leaves a small, upright, whitish patch in the space between them; this patch contains a small, dark spot at the costal end and indications of a minute dark dot at base. T.p. line smoky, well rounded opposite cell and then strongly inwardly oblique to about middle of inner margin, the space between the two lines at this point being much narrower than in *orthogonia*. S.t. line indicated by a row of partly joined, triangular, whitish spots, parallel to outer margin and showing no trace of W-mark or of dark, preceding arrow-marks, although at costa a diffuse smoky shade is present. Terminal area somewhat more smoky than subterminal one. A series of small dark terminal lunules; fringes pale crossed by two smoky lines, situated beyond base and before outer edge of same. Secondaries white, with faint smoky shading along outer margin. The genitalia are very similar to those of *orthogonia* but the clasper is decidedly narrower and the apical area containing the corona not so enlarged. The harpe is more slender and the aedeagus shorter. Expanse 29 mm.

*Holotype*—♂, Cedar Valley, Utah, Sept. 26, 1940 (H. F. Thornley); No. 5643 in the Canadian National Collection, Ottawa.

#### *Anaplectoides brunneomedia* n. sp.

Intermediate in size and type of maculation between *pressus* and *prasina*. Palpi with second joint deep black-brown, tipped apically with white. Head and collar contrastingly white. Thorax light ochreous with a greenish tinge and heavy dark shading on the patagia. Primaries light greenish-ochreous with the entire median area between t.a. and t. p. lines velvety black-brown. Maculation much as in *pressus*, the cross-lines being geminate and more or less filled in with whitish. A dark brown costal spot at base; antemedian space pale with small dark costal spot before t.a. line and slight smoky shading above inner margin; orbicular and reniform obscured by the dark brown color of the median area but very similar to those of *pressus*. The t.p. line is extended outwardly along veins by dark streaks, giving it a strongly dentate appearance. Subterminal and terminal spaces similar in color to antemedian space, separated by an irregular pale s.t. line, bordered inwardly by prominent dark arrow-marks. A prominent lunate dark terminal line; fringes deep smoky. Secondaries light smoky with large discal dot and indications of a deeper smoky subterminal shade; dark terminal lunules and whitish fringes. Expanse 42 mm.

*Holotype*—♂, Mountain Lake, Va., July 1, 1938 (L. and M. Milne); No. 5642 in the Canadian National Collection, Ottawa.

#### *Abagrotis denticulata* n. sp.

Resembling *barnesi* in size and general coloration but differing in the more even appearance of the primaries with less obvious reniform; the genitalia are quite distinct.

Palpi with second joint deep blackish outwardly, tipped with ochreous; third joint ochreous. Antennae simple. Vestiture of head and thorax deep smoky ochreous, the collar somewhat paler and showing traces of a dark cross-line; both it and the thorax lightly sprinkled with blackish. Primaries evenly light ochreous-brown, sprinkled lightly with black dots. The geminate cross-lines are distinct, blackish, filled with non-contrasting ground-color and much as in other species. The orbicular is small, circular, light ochreous with central smoky filling; reniform upright, rather narrow, outlined in light ochreous with central, non-contrasting, smoky-brown shade. S. t. line pale ochreous, irregular,

preceded, especially at costa, by smoky shading which tends to make the subterminal area the darkest section of the wing. Terminal area somewhat paler than the rest of the wing but not markedly contrasted. A faint terminal row of smoky dots. Fringes deep smoky, tipped and sprinkled with white scaling and with a thin light ochreous basal line. Secondaries very deep smoky with faint ochreous tinge toward base. Fringes with a basal ochreous line followed by a smoky band; outer half white. Underside paler with distinct discal spot and postmedian curved line; terminal area suffused with smoky.

The male genitalia show the most similarity to those of *variata*, the narrow terminal portion of the clasper being strongly bent ventrad and with sharply truncate apex. The strongly bulging costal margin of the sacculus is more evenly rounded than in *variata* and the vestigial harpe slightly longer and more curved. The greatest difference is found in the aedeagus which is long, narrow and armed apically on right side with a thin chitinous plate containing four small spines, one being vestigial, a unique feature in the genus; the vesica contains a single, small, conical spine without base. Expanse 38 mm.

*Holotype*—♂, Petaluma, Sonoma Co., Calif., June 20, 1938 (W. Bauer); No. 5646 in the Canadian National Collection, Ottawa.

***Polia frustrata* n. sp.**

Belongs in the *ingravis-cristifera* group according to male genitalia. Differs in the greatly reduced cucullus, which is smaller than that of *ingravis*, and the practical lack of a neck, this area being short and chunky and gradually broadening to the base of the digitus. The costo-basal bulge of the sacculus is much as in *ingravis* but more definitely rectangular.

Color and type of maculation that of *cristifera*. Head and thoracic vestiture with more white suffusion than found in *cristifera*. Primaries black with an overlying sprinkling of white scales, intensified in the subterminal and terminal areas but without the prominent white tornal patch of *cristifera*. Orbicular and reniform very prominent, white, partially filled with smoky, the former large, circular, the latter upright, chunky and with only a faint excavation on outer margin; claviform prominent, white, with a faint greenish tinge and partial smoky filling. S. t. line pale greenish-white, irregular, with indications of a W-mark preceded by prominent black arrow-marks, but lacking the black edging of *cristifera* above tornus. A terminal series of black lunules. Fringes black, cut by pale greenish-white dashes opposite the veins. Secondaries heavily smoky over a pale ground with broad black terminal border and lunate discal mark. Fringes white with black basal band. Beneath primaries smoky with costa and terminal areas strongly white-sprinkled. A large black discal spot and a dark postmedian line in costal half of wing. Secondaries heavily sprinkled with smoky over a pale ground-color. A prominent dark discal spot and curved postmedian line as well as traces of a darker subterminal shade-band. Expanse, ♂ 33 mm.; ♀ 37 mm.

*Holotype*—♂, White Bay, Newfoundland (Forest Ins. Survey 1944/5); (Bred from larva on *Larix*; emerged Feb. 26 in lab.); No. 5647 in the Canadian National Collection, Ottawa.

*Allotype*—♀, Humber, Newfoundland; same breeding data.

*Paratypes*—1 ♂, 1 ♀, same data as Allotype.

Very close in male genitalia to those of the European *glaucia*. The corona of the cucullus is, however, somewhat smaller and the neck chunkier, with the costal edge rigidly straight and not slightly concave as in *glaucia* and the junction with the clasper-margin merely angled and not drawn out to a point. The ventral bulge of the clasper—below the neck—which contains the small hair-tuft is less pronounced; the apical rod-like extension of the juxta is longer and narrower and the aedeagus is shorter and more strongly bent, with a somewhat less elongate spine-cluster in the vesica. It might be considered a race of *glaucia* but in view of the difference in larval food-plants (that of *glaucia* being listed as *Vaccinium*) I prefer to hold it as a good species.



**Eumichtis gunderi B. & B.**

*Eumichtis gunderi* Barnes & Benjamin, 1927, Can. Ent., LIX, 7.

A recent examination of the type in the United States National Museum by T. N. Freeman shows that the name has been misplaced in the 1938 Check List. *Gunderi* proves to be nothing but a rather poor and slightly paler race of *Ioda* Stkr. from Utah, both on maculation and male genitalic characters, and will consequently fall in the genus *Platypolia* (vide McDunnough 1935, Can. Ent., LXVII, 172). *Ioda* and its allies can at once be distinguished from the *versuta* group of *Mniotype* Franc. (*Eumichtis* Auct.) by the time of flight of the imago which occurs in the fall (Aug., Sept.) whereas *versuta* flies in the late spring (June).

**Genus *Mniotype* Franc.**

The species of this genus all run very close to each other in maculation and general appearance and in some instances the identifications are doubtful. They seem, however, to fall into two groups on a male genitalic character found in the shape of the costo-basal margin of the sacculus. In the one case this margin is evenly rounded whilst in the other group it is drawn out into a strong pointed projection toward its apex. The first group is allied to the European *adusta* Esp. and includes *sommeri* Lef., as far as I know it from a single male Greenland specimen, *versuta* Sm. based on Calgary, Alta., material of which we have a long topotypical series from the Wolley-Dod Collection, and *tenera* Sm. under which name I doubtfully include some Vancouver Island specimens which, while not exactly matching the worn female type from Kukuk Bay, S. Alaska, do fit in with Ketchikan, Alaska, specimens under this name in the United States National Museum. The second group contains *ducta* Grt. which name I apply to a small series from eastern Canada (Que., N. S.) and *miniota* Sm. from Man., Sask., and Alta.; *ferida* Sm., based on females from Newfoundland, I have not definitely placed, but if my tentative determination of a small series from Hopedale, Labrador, as this species is correct, it will also fall into this second group. All the above-mentioned species can be separated on characters found in the armature of the vesica and the shape of the juxta and cucullus.

I have before me a single Arizona male, which falls into Group 1 but which has other genitalic characters which separate it from described North American species; for this I propose the following name.

***Mniotype pallescens* n. sp.**

*Male.* Antennae feebly serrate and fasciculate. Head, thorax and primaries of a brown color with a slight pinkish hue and heavily suffused with black; head and collar each crossed by a black, transverse line. Maculation similar to that of other members of the genus; black basal dash prominent and slightly forked apically; dark dash in fold of median space similarly prominent, s.t. line with well-developed W-mark and the usual preceding, black arrow-dashes; a paler shade in subterminal space above inner margin forms a large obscure patch. Secondaries white with broad smoky shade along outer margin, narrowing toward inner angle; veins outlined in smoky; a dark terminal line and pale fringes, sprinkled with smoky. Expanse, 35 mm.

In the genitalia the costal bulge of the sacculus is strongly rounded and shagreened as usual; the small costal projection at base of cucullus is considerably closer to apex of clasper than in either *versuta* or *tenera* (so-called); the juxta is narrowed with its apex drawn out into two points, longer than usual; the apical spined patch of the aedeagus is shorter, less curved and with shorter spines than in *versuta*.

*Holotype*—♂, Arizona (O. Bryant), (no further detail but probably from the neighborhood of Tucson or the Chiricahua Mts.); No. 5655 in the Canadian National Collection, Ottawa.

***Apharetra californiae* n. sp.**

Palpi black, heavily sprinkled with white scaling. Head largely white, with a certain amount of black sprinkling and a black band across the front be-

tween the eyes. Antennae simple. Collar black, tipped with white. Thoracic vestiture blackish, heavily sprinkled with white on the patagia and the tufts. Primaries blackish with slight purplish tinge and considerable sprinkling of white scaling, especially in costal region. Basal half-line indicated by a short outwardly oblique dark streak on costa. T.a. line very irregular, forming a *strong, sharp, outward angle* in the cell the apex of which touches base of orbicular; another broader outward angle is formed in the fold and a short projection occurs above inner margin; the line is black, edged inwardly with white, very heavy between costa and base of orbicular, finer and less evident for the remainder of its course. A black streak, bordered on upperside by white, runs from base of wing through the fold as far as the t.p. line, broken by the t.a. line. Orbicular a white, decumbent, oval ring, filled with ground-color and edged slightly with black above cubitus, which in this area is scaled with white; reniform rather broadly kidney-shaped, whitish, with the lower portion obscured by blackish shading, with a central ring of darker scaling and a slight outer black edging. Traces of a dark, angled, median shade-line, most distinct as an outwardly oblique dash below costa and an inwardly oblique mark above inner margin. T.p. line black with narrow outer border of white, commencing from a small, dark, costal dash above reniform, very strongly, and almost squarely, exerted opposite cell, feebly dentate, then slightly irregular with a short outward angle above inner margin. Between the lower portion of t.p. line and tornus is a *large, whitish spot*, the most prominent feature of the maculation; this spot contains several superimposed dark dashes and is bordered on coastal side by a heavy blackish shade which extends obliquely inward to base of reniform. Radial and cubital veins in outer area outlined in black. S.t. line not traceable but possibly indicated by several dark streaks opposite cell. There is an irregularly rectangular dark sabapical patch and a faint trace of a dark shade from base of reniform to middle of outer margin, the area between these dark portions being white-shaded as is also the extreme outer area in the costal half of wing. Fringes strongly black and white checkered. Secondaries light smoky; fringes similar, paling outwardly and with a fine, pale, basal line. Expanse, 35 mm.

*Holotype*—♂, Nelson Cr., Plumas Co., Calif., Aug. 12, 1940 (W. R. Bauer); No. 5645 in the Canadian National Collection, Ottawa.

The male genitalia are very similar to those of our eastern species and only show very minor differences in the shape of the juxta and the spining of the vesica; clasper and harpe practically identical.

#### *Eupsilia knowltoni* n. sp.

Palpi with second joint outwardly pale/clay-color, clothed with long brown hairs ventrally. Antennae with shaft white dorsally, very feebly serrate and ciliate. Head and thorax clothed with brown hair, tinged with hoary, especially on the collar. Primaries a rather light, bright brown, much the color of *morrisoni*, with considerable sprinkling of whitish scales especially in costal and subterminal regions, giving a general hoary appearance. Traces of a fine, darkish, basal line from costa at one-sixth to base of wing. T.a. line obsolete; in its place a brown, somewhat inwardly oblique and rigidly straight line crosses the wing from mid-costa to inner margin just before middle; this line is sharply defined inwardly but diffuse outwardly, the color gradually merging into the ground-color and terminated in the cell by the reniform mark. Orbicular and claviform obsolete; reniform represented by a pale, ochreous lunate line; shaded inwardly by the above mentioned brown color and resting on the cubitus which in this area is slightly tinged with smoky. T.p. line faint, pale grayish; starting from above reniform on costa it curves outward around cell and then proceeds to inner margin, subparallel to the median shade-line. S.t. space crossed outwardly by a rather striking, oblique, pale shade-line, parallel to the median shade; just outside of this and separated from it by a narrow brown area a fine irregular, pale, s.t. line is visible, merging into the oblique shade before costa. Terminal

area and fringes brown, lightly sprinkled with whitish. Secondaries deep smoky with pale pinkish-brown fringes, and an obscure lunate dark, discal mark, much more prominent on underside. Expanse, 39 mm.

*Holotype*—♂, Logan Canyon, Utah, Sept. 15, 1939 (G. F. Knowlton); No. 5644 in the Canadian National Collection, Ottawa.

***Hyppa contrasta* n. sp.**

Similar in size and general type of maculation of primaries to *xylinoides* but the entire median space a deep brown, strongly contrasting with the pale fawn basal area and the fawn and white subterminal section. T.a. line less outwardly oblique than in *xylinoides* with a broader and shallower inward angle on vein 1 and less of an outward projection above inner margin; in consequence the distance on this margin between the t.a. and t.p. lines is considerably greater. Basal space light fawn-brown with a heavy black basal dash below cubitus and a fainter one, edged with white along inner margin. Median space filled with deep brown, obscuring almost completely the orbicular and reniform; the usual black dash above vein 1 connects the t.a. and t.p. lines. T.p. line much as in allied species with the outward bulge opposite cell possibly somewhat more accentuated. Subterminal space shaded with pale fawn in the costal half of wing and with white scaling below vein 4; and white spot at end of black bar through the median space very prominent and nearly filling the space to s.t. line, being separated from this by a thin, brownish line. S.t. line indicated above vein 4 by four prominent black arrowmarks, somewhat edged outwardly with whitish; below this, white, edged with brown and with very prominent, W-mark, extending to outer margin above and below this the terminal space shaded with deep brown, especially the arc above inner margin. Secondaries smoky brown, somewhat paler basally.

*Holotype*—1 ♀, Mountain Lake, Va., July 1, 1938 (L. and M. Milne); No. 5641 in the Canadian National Collection, Ottawa.

***Heliethodes joaquin* n. sp.**

Scarcely to be distinguished in maculation from *diminutiva* Grt. The primaries show the same olive-green coloration, suffused with blackish and with slight pinkish tinges, noticeably along inner margin. At base of cell is a minute white spot and at apex of same a slightly larger one. The postmedian pale band is broken into two obliquely placed, roughly rectangular, white spots, rather variable in size and (in my series at least) well separated from each other. The secondaries are black with a round white spot opposite cell and a second smaller spot (sometimes conjoined) above inner margin near centre. Fringes on both wings dark in basal half, white in outer half. Beneath as in *diminutiva*. Expanse 18-20 mm.

The frontal projection is longer than that of *diminutiva* and the truncate apex distinctly narrower and less circular, with the ventral edge more excavate in centre. The male genitalia are distinct from those of *diminutiva*. In this latter species the claspers are of more or less even width throughout, narrowing slightly beyond the rather weak sacculus and broadening gently in the cucullus section. The vesica shows a single small cornutus. In the present species the sacculus is broader, a distinct narrow neck is present at the base of the cucullus, and the ventro-basal edge of the cucullus is drawn out into a *distinct sharp tooth*. The vesica is unarmed.

*Holotype*—♂, Lone Tree Canyon, San Joaquin Co., Calif., Apr. 21, 1938; No. 5689 in the Canadian National Collection, Ottawa.

*Allotype*—♀, same data.

*Paratypes*—2 ♂, same locality, Apr. 21, 1938, Mch. 25, 1943; 1 ♂, 5 ♀, Hospital Canyon, San Joaquin Co., Calif., Apr. 15, 1942.

## AN ANNOTATED LIST OF THE ICHNEUMONOIDEA OF ALBERTA

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During the past twenty-five years, the writer has made spasmodic collections of Ichneumonoidea in various parts of Alberta, although, in the earlier years, prospects for getting them authoritatively determined were somewhat remote. In addition, smaller collections, chiefly one made by Dr. G. Salt and determined by Mr. R. A. Cushman in 1927\*, duplicate specimens taken by Dr. R. Salt in later surveys of insects associated with alfalfa, and specimens taken by a few university students, have been donated to the university collection.

In 1938 as well as in subsequent years, Dr. H. K. Townes most generously agreed to determine the Ichneumonidae and, at about the same time, Dr. R. D. Shenefelt asked for the Braconidae for study. Many of the latter were returned unnamed. With the aid of Muesebeck's keys in a few genera we were able to name a moderate number of these with a fair degree of certainty. In 1945, however, Mr. G. S. Walley re-examined all of our material in this family. At the same time he generously furnished us with a list of all Ichneumonoidea, represented in the National Collection at Ottawa, which had been taken in Alberta.

With the appearance of Townes' invaluable catalogue\*\*, it has been possible for us to check and to rearrange the material in this collection and to eliminate the extensive synonymy which had existed in earlier published records from this province.

The following list can, therefore, be considered as a fairly complete and up-to-date record of the species which are now known to occur in Alberta. Since very few records have been published in connection with captures made in adjacent territory, this would appear to be an opportune time to record our greatly increased knowledge regarding the distribution of many of these important parasites, despite the fact that the collection contains numerous additional species which, at the time of writing, can be determined to genus only. These are not included in the following list.

From the very complete bibliography given by Townes, it is apparent that approximately 50 per cent of the species contained in the university collection have not previously been recorded as occurring in Canada west of the Great Lakes, while some 20 per cent are new dominion records. In this list, 90 per cent of the names employed are used for the first time with reference to species now known to inhabit this province.

*System of recording employed in this list.* Species which are represented in the university collection are preceded by an asterisk. Each such name is followed by initials indicating the name of the first authority who determined the species for us. Since several of the earlier determinations were incorrect or have now been sunk into synonymy, these names, if the records were published, with those of the authorities who determined them, are added in parentheses. It has been considered unnecessary so to do in the case of unpublished determinations or where generic synonymy, only, is concerned. In the latter cases, there is no doubt as to the identity of the species in the mind of the determinor.

Many of the determinations credited to Cushman, Viereck, or Peck have been confirmed by Townes. Such determinations are followed by the initials of both determinors.

Initials so employed refer to the following authorities, to whom grateful acknowledgement is made for their invaluable assistance in the preparation of this list: (C.) R. A. Cushman; (P.) O. Peck; (R.S.) R. D. Shenefelt; (E.S.) E. H. Strickland; (T.) H. S. Townes; (V.) H. L. Viereck; (W.) G. S. Walley.

Records not preceded by an asterisk, with the determination credited to Walley, are species contained in the Canadian National Collection which have

\*58th Ann. Rept. Ent. Soc. Ont. (1927), 101-103, 1928.

\*\*Mem. Amer. Ent. Soc. 11, pt. 1 and 2, 1944 and 1945.

not been, elsewhere, recorded as occurring in Alberta, while those credited to Townes refer to species retained by him.

Species of which we possess literature records only are listed without further data, other than those of dates and localities. Any additional data available to us can be found in Townes' catalogue.

In order to save space, localities in Alberta are given by a system of Arabic numerals. These conform with the ecological areas into which the province was divided, which were described in some detail, by the writer in his list of Diptera of Alberta\*. A town, or feature, has been selected in each of these relatively small areas. Each can be considered as the name of the locality indicated by the numeral. The majority of captures have been made within a few miles of the named town. A few specimens, however, may have been taken up to 50 miles from the town itself, though in the same general ecological environment.

These numerical locality records can, therefore, be interpreted as follows:—

1. *Cypress Hills*: S. E. Alta., partly treed, elevation up to 4,500 ft.
2. *Medicine Hat*, 3. *Lethbridge*: Short-grass prairie. Former dry; latter about 50 per cent irrigated.
4. *Vermilion*, 5. *Drumheller*, 6. *Calgary*: Short to long-grass prairie.
7. *Wainwright*, 8. *Red Deer*: Parkland, about 50 per cent aspen poplar groves.
9. *Saint Paul*, 10. *Edmonton*: Mixed aspen and spruce; about 50 per cent cleared.
12. *Athabaska*, 15. *Beaverlodge*: Mixed northern forest and parkland.
16. *Edson*, 17. *Cochrane*: Foot-hill zones.
18. *Waterton*, 19. *Banff*, 20. *Nordegg*, 21. *Jasper*: Mountainous regions.

The months during which species have been taken on the wing are designated by Roman numerals.

Thus, the record: "\**Diplazon pectoratorius* Th. (T.) = *pulchripes* (C.) 8, 10, 12. V-VIII." is interpretable as: "Species represented in the University of Alberta collection; so determined by Townes; earlier recorded in the literature as occurring in Alberta by Cushman's determination as the synonym *pulchripes*; taken in the vicinity of Red Deer, Edmonton, and Athabaska from May to August, inclusive".

Though a few species have been reared here, there is little to add to the host records as given by Townes.

#### BRACONIDAE Braconinae.

- \* *Agathis cinctus* Cr. (E.S.), (W.) 4. IX.
- \* *discolor* Cr. (W.) 10. VII.
- \* *gibbosus* Say (R.S.), (W.) 10. VII.
- \* *nigripes* Cr. (E.S.), (W.) 3. VIII.
- \* *perforata* Pr. (R.S.), ? (W.) 12. VII.
- \* *tibiator* Pr. (E.S.), (W.) 4. IX.
- \* *Apanteles caudatus* Mues. (E.S.), (W.) 5, 10, 15. VII-VIII.
- \* *crassicornis* Pr. (V.) 10. VIII.
- \* *laeviceps* Ash. (E.S.), (W.) 3, 6, 15. VI-VIII. An important parasite of *Euxoa ochrogaster* and *Chorizagrotis auxiliaris*.
- \* *xylinus* Say. (W.) 10. VII.
- \* *Aphidius rapae* Curt. (E.S.) 3. IV-VIII. Overwinters in very large numbers in *Brevicoryne brassicae*.
- \* *Atanycolus charus* Ry. (W.) 10. VI.
- \* *Bracon cephi* Gah. (E.S.), (W.) 5. VII.
- \* *nr. cinctus* Prov. (W.) 10. VIII.

\*Canad. Jour. Res., sec. D, 16:175-219, 1938.



- \* *connecticutum* Vier. ? (E.S.), ? (W.) 8, 10, 15. VI-VII.
- \* *gastroidea* Ash. (E.S.), (W.) 10. VI.
- \* *gelechia* Ash. (E.S.), (W.) 10. VI.
- \* *hyslopi* Vier. (E.S.), ? (W.) 3, 4. VI.
- \* *nuperus* Cr. (E.S.), (W.) 3, 4, 10. VI-VIII.
- \* *Bucculatriplex secundus* Vier. (W.) 10. VIII.
- \* *Cardiochiles exploratus* Say. (W.) 3. VII.
- \* *viator* Say. (W.) 2. VIII.
- \* *Chelonus* spp.
- \* *Crassomicrodus apicipennis* Mues. ? (E. S.), ? (W.) 3. VIII.
- \* *Cremnops comstocki* Morr. (R.S.), (W.) 10. VI-VII.
- \* *vulgaris* Cr. (R.S.), (W.) 3,4,5,7,10, 17,18. VI-IX.
- \* *Earinus limitaris* Say (V.), (W.) 6,10, 15. V.
- \* *Euphorus pallipes* Curt. (W.) 3,7,10. VI-VII.
- \* *Macrocentrus cerasivoranae* Vier. (W.) 3. Bred from cell of *Anthophora* sp. IX.
- \* *crassipes* Mues. (W.) 4. IX.
- \* *harrisi* DeG. "Alta".
- \* *incompletus* Mues. (W.) 3. VI.
- \* *instabilis* Mues. (W.) 10. VII-VIII.
- \* *nigridorsus* Vier. (W.) 10. VIII.
- \* *pallisteri* deG. (R.S.), (W.) 10. VII.
- \* *terminalis* Ash. (W.) 10. VIII.
- \* *Meteorus arizonensis* Mues. (E.S.), ? (W.) 15. VI.
- \* *dimidiatus* Cr. (E.S.), (W.) 2,3,10. VI & VIII-IX.
- \* *humilis* Cr. (W.) 15. V.
- \* *nr. hyphanthiae* Ry. (W.) 10. VII-VIII.
- \* *loxostege* Vier. (E.S.) (W.) 2,3,4. V-VII & IX.
- \* *nr. trachynotus* Vier. (W.) 10. VIII.
- \* *vulgaris* Cr. (E.S.), (W.) 3,10,15. VII-VII & IX. Bred from *A. orthogonia*, *E. tristicula* and *C. devastator*.
- \* *Microctonus eleodis* Vier. (R.S.), (W.) 2. Bred from *E. hispilabris*, VII.
- \* *Microgaster canadensis* Mues. (W.) 10. V.
- \* *nr. carinata* Pack. (W.) 10. VI.
- \* *congregatiformis* Vier. ? (V.), (W.) 8,10. VI-VII.
- \* *facetosa* Weed. (V.), (W.) 10,18. VI-VII.
- \* *Microplitis alaskensis* Ash. (V.), (W.) 2,3,12. V-VIII.
- \* *carteri* Wly. 3. VI.
- \* *hyphanthiae* Ash. (E.S.), (W.) 10. VII.
- \* *Opius nr. coloradensis* Gah. (W.) 10. VIII.
- \* *downesi* Gah. (W.) 10. VIII.
- \* *Orgilus detectus* Prov. (W.) 3,17. V-VI & X.
- \* *Perilitus coccinellae* Sch. (W.) 3. IX.
- \* *Rogas canadensis* Cr. (R.S.) 10. VI.
- \* *terminalis* Cr. (R.S.) 3,8,10,18. IV-VIII.
- \* *Vipio croceus* Cr. (W.) 3. VIII.

#### Alysiinae.

About six species are represented in the collection, but these can be determined to genus only.

#### ICHNEUMONIDAE.

##### Ichneumoninae.

- \* *Scambus alborictus* Cr. (T.) 6,10,15. VI & VIII.
- \* *hispae* Harr. (T.) 10,12,15,17. V-X.
- \* *pterophori* Ash. (T.) 3,4,10,15. VI-IX.

- \* *Calliephialtes nubilipennis* Vier. (T.) 6, 20. III-IV. Bred from *P. engelmanni*.
- \* *Ichneumon cephalotes* Holm. ? (T.) 7. Three specimens of this species, in which the ovipositor is from  $4\frac{1}{2}$  to 5 times the length of the rest of the body, have been obtained in this province.
- \* *imperator* Kr. (T.) 4, 10, 15, 18. VI & VIII.
- \* *manifestor* L. (T.) 15, 18. VIII.
- \* *Iseropus brunneifrons* Vier. (T.) 10, 12. VI-VIII.
- \* *Tromatobia rufopectus* Cr. (C.), (T.) 10. VI-VIII.
- \* *rufovariata* Cr. (T.) 8, 10. VI-VIII.
- \* *scriptifrons* Cr. (T.) 3, 10. VI-VII.
- \* *Zaglyptus incompletus* Cr. (T.) 3, 8, 10. V-IX.
- \* *Pseudorhyssa sternata* Merr. (T.) 18. VII.
- \* *Delomerista diprionis* Cush. (T.) 10, 21. V-VI & VIII-IX. Bred from *Neodiprion* sp.
- \* *novita* Cr. (T.) 10, 12. VI-VIII.
- \* *Perithous pleuralis* Cr. (T.) 8, 10, 18. VI-VIII.
- \* *Zabrachypus primus* Cush. (T.) 10. VII.
- \* *Oxyrrhexis carbonator* Grav. (T.) = *P. texana* (C.) 3. VI-IX.
- \* *Colpomeria kincaidii* Ash. (W.) 3. VI.
- \* *Polysphincta burgessi* Cr. (T.) 10. VIII.
- \* *Schizopyga frigida* Cr. (T.) 10, 18. VI & VIII-IX.
- \* *Coccygomimus aquilonius* Cr. (T.) 6, 10. VI-IX.
- \* *pedalis* Cr. (C.), (T.) 3, 6, 8, 10, 12, 15, 18, 21. V-IX.
- \* *tenuicornis* Cr. (C.), (T.) 8, 10, 15. V-VII.
- \* *Ephialtes annulicornis* Cr. (T.) 10. VI-VII.
- \* *ontario* Cr. (T.) 3, 19. VII-IX.
- \* *picticornis* Cr. (T.) 8, 10, 15, 19. V-VII.
- \* *Itoplectis atrocaxalis* Cr. (T.) 3. V-VI.
- \* *conquisitor* Say (T.) 4, 10. VIII-IX.
- \* *obesus* Cush. (T.) 18. VII-VIII.
- \* *quadricingulatus* Pr. (T.) 4, 12. VIII.
- \* *Poemenia americana* Cr. (T.) 10. VII.
- \* *vancouveriensis* Prov. (T.) 8. VII.
- \* *Deuteroxorides borealis* Cr. 20. VII.
- \* *Rhyssa alaskensis* Ash. (T.) 18, 19. VII.
- \* *lineolata* Kby. (T.) 15. VIII.
- \* *persuasoria* L. (T.) 17, 19. VIII.
- \* *Megarhyssa nortoni* Cr. (C.), (T.), 3, 6, 18. VII-VIII.
- \* *Theronia atalantae* Pod. (T.) = *fulvescens* (C.) 10, 12, 18. V-VIII.
- \* *Xorides insularis* Cr. (C.) 6. VIII.
- \* *stigmapterus* Say (C.), (T.) 10, 15. VI.
- \* *Odontocolon brevicaudum* Cush. 18. VII.
- \* *canadense* Pr. (T.) = *E. propinquus*. 3, 18. VI-VII.
- \* *dichrous* Roh. (T.) 10, 18, 20. VI-VII.
- \* *vicinum* Cr. (T.) 8, 10, 21. VII.

# Tryphoninae

- \* *Eclytus ornatus* Holm. (W.) 19. VII.
- \* *Phytodietus burgessi* Cr. (C.), ? (T.) 3, 6. VII-VIII.
- \* *pleuralis* Cr. (T.) 8. VI.
- \* *pulcherrimus* Cr. (T.) = *distinctus* 3, 4, 5, 7, 10. V-VII.
- \* *vulgaris* Cr. (C.), (T.) 6, 10. VII-VIII.
- \* *Netelia* (*Paropheltes*) *alaskensis* Ash. (T.) 10. VI.
- \* *barberi* Cush. (C.), (T.) 10. VI-VII.
- \* *tarsata* Bris. (T.) 10. VI.
- \* (*Netelia*) *brevicornis* Cush. (T.) 3, 10. VI-VII.

- \* *suturalis* Tow. (T.) 1, 3. V-VI.
- \* *Netelia ocellata* Vier. (T.) 3. VIII-IX.
- \* (*Parabatus*) *deceptor* Mor. (T.) "Alta".
- \* *Polyblastus carbonarius* Grav. 10. VI.
- \* *pedalis* Cr. (C.), (T.) 1, 8, 10, 15, 19. V-VII & IX.
- \* *strobilator* Thb. (T.) = *varitarsus* (C.) 3, 10, 12, 18. VI-VIII.
- \* *tibialis* Cr. (T.) 10. VII.
- \* *Labroctonus dorsalis* Prov. (T.) 10. VI-VII.
- \* *Scopiorus dilatatus* Pr. (T.) 10. VI-VIII.
- \* *expansus* Dav. (T.) 10. VI.
- \* *subcrassus* Cr. (T.) 10. VII.
- \* *Erromenus dimidiatus* Cr. (C.), (T.) 10. VI-VII.
- \* *Tryphon alaskensis* Ash. (T.) 15. VII.
- \* *atripes* Dav. (C.), (T.) 10. VI-VIII.
- \* *communis communis* Cr. (C.), (T.) 3, 8, 10, 12, 19. VI-VII.
- \* *innumerabilis* Dav. (T.) 1, 10, 17, 18. VI-VII.
- \* *seminiger* Cr. (T.) 12. VI-VII.
- \* *Symboethus* spp.
- \* *Cosmoconus canadensis* Pr. (T.) 10. VII-VIII.
- \* *Cteniscus clypeatus* Cr. (C.), (T.) 8, 10. VI.
- \* *ornatus* Walsh. (C.) 10. VI-VII.
- \* *Smicroplectrus albilineatus* Walsh. (T.) 3, 19. VI-VII.
- \* *annulipes* Cr. 8, 10. VI-VII.
- \* *robustus* Wly. (T.) 8, 12. VI.
- \* *velox* Wly. (T.) 8. VI.
- \* *Exyston boreotis* Dav. (T.) 10, 15, 18, 19. VI-VII.
- \* *nigreo* Dav. (W.) 19. VII.
- \* *variatus* Pr. (T.) = *rufinus* (C.) 10, 19. VI-VIII.
- Cryptinae
- \* *Bathythrix claviger* Tasch. 19. VII.
- \* *subargentea* Cr. (T.) 8, 18. VI-VII.
- \* *Mastrus aciculatus* Pr. (T.) 3, 10, 17. VI-VII & IX.
- \* *gigas* Pr. (T.) 10. VII.
- \* *Acrolyta nigricapitata* C. & D. (T.) 10. VII.
- \* *Otacustes crassus crassus* Pr. (T.) 3. VII & IX.
- \* *Haplaspis mandibularis* Pr. (T.) 10. Bred from *H. maculata* IV.
- \* *Gelis drassi* Ry. (T.) 3. VI & IX.
- \* *Gnypetomorpha flagellata* Dav. (T.) 2, 10, 15. V-VII & IX.
- \* *Sternocryptus subspinosus* Pr. (T.) 10. VI.
- \* *Endasys mandibularis mandibularis* Cr. (T.) 10, 15. VII.
- \* *pubescens* Pr. (T.) 5, 10, 12. VI-VII.
- \* *Phygadeuon aciculatus* Pr. (T.) 10. VI-VIII.
- \* *subfuscus* Cr. (T.) 3, 10. VI-IX.
- \* *Stilpnus americanus* Cr. (T.) 3. VIII.
- \* *Cubocephalus alacris* Cr. (T.) 21. VII.
- \* *ater* Ash. (T.) 8. VIII.
- \* *mellicoxus* Pr. (T.) 10. VII.
- \* *osculatus* Pr. (T.) 3. VI & VIII-IX.
- \* *Aptesis aterrima* Pr. (T.) 10. VI-VII.
- \* *rubrocincta* Pr. (T.) VI-VII.
- \* *Schenkia placida* Pr. (T.) 10. VI.
- \* *Polytribax crotchii* Cr. (T.) 10. VI-VII.
- \* *Rhembobius abdominalis* Pr. (T.) 9, 10. V-VIII.
- \* *Neostricklandia serricata* Vier. (T.) 10. VII-VIII.
- \* *Trychosis limatus* Cr. (T.) 1, 10, 12, 15. VI-VII.
- \* *montivagus* Pr. (T.) 10. V-VII.

- \* *Gambrus canadensis* Pr. (T.) 10,12,16. V-VII.
- \* *imitator* Pr. (T.) 3. VI.
- \* *notatus* Pr. (T.) 3,10. VI.
- \* *zoesmairi* D.T. (T.) 10. VI.
- \* *Agrothereutes cimbicivorus* Cush. (T.) 10. VI.
- \* *rufopectus* Cush. 10. VI.
- \* *Ischnus atricollaris* Walsh (T.) = *exilis* (C.) 6-8,10. VI-VIII.
- \* *Compsocryptus calipterus* Say. (T.) 2. VI.
- \* *resolutus* Cr. (T.) 1. VI.
- \* *Cryptus albitarsis albitarsis* Cr. (T.) 3,10,12,15. VI-VIII.
- \* *coloradensis* Ash. (T.) 3. VI-VII.
- \* *altonii* D.T. (C.), (T.) 1,3,6,9,10,15,17,21. V-VIII.
- \* *luctuosus* Cr. = *caligatus*. 3,19. VIII-IX.
- \* *relativus* Cr. (W.) 18,19. VI.
- \* *robustus* Cr. (C.), (T.) 1,6. V-VI.
- \* *Listrognathus albomaculatus sagax* Pr. (W.) 2,10,18. IV-VII.
- \* *Mesostenus gracilis* Cr. (W.) 3. VII.
- \* *melanurus* Cush. 6. V.
- \* *thoracicus* Cr. (T.) 10. VI.
- \* *Xylophurus bicolor* Cush. (C.), (T.) 6. V.
- \* *Echthrus rufopedibus* Harr. (W.) 18. VI.
- \* *Helcostizus yukonensis* Ash. (T.) 10. VIII.
- \* *Messatoporus rufiventris* Cush. (T.) 2. VI.
- \* *Acroricnus aequatus aequatus* Say. (C.) 10. VI-VIII.
- \* *excelsus* Cr. (W.) 18. VII.

#### Phaeogeninae.

- \* *Phaeogenes cacoeciae* Vier. (T.) 10. VI-VII.
- \* *Diadromus marginatus* Pr. (T.) 3. V.
- \* *Rhexidermus huardi* Pr. 10. III & X.
- \* *Dicaelotus sectus* Pr. (T.) 15. VI.
- \* *Platylabus canadensis* Cr. (T.) 10. VI-VII.
- \* *scutellatus* Pr. (T.) 10. VIII.
- \* *Neotypus lapidator* Fab. (T.) 10. VI.
- \* *Hoplismenus morulus* Say (C.), (T.) 8,10. VII.
- \* *Melanichneumon brevicinctor* Say (T.) 10. VI-VII.
- \* *gestuosus* Cr. ? (C.) 10. VI.
- \* *saundersii* Cr. (T.) 10. VI.
- \* *texanus* Cr. (T.) 8. VI.
- \* *Cratichneumon acerbus* Cr. (P.), (T.) 8,10,15,20. IV-VIII.
- \* *pilosulus* Pr. (T.) 10. VII.
- \* *promptus* Cr. (T.) 10. VI.
- \* *scitulus* Cr. (C.), (T.) 10. VI.
- \* *vescus* Pr. (C.), (T.) 4,8,10. VI-VIII.
- \* *Aoplus cincticornis* Cr. (C.), (T.) 4,10,12. V-XI.
- \* *confirmatus* Cr. (T.) 18. VIII.
- \* *pallidipennis* Vier. (T.) 1,2,10,21. VI-IX.
- \* *vagans* Pr. (T.) 8,10. V-VII.
- \* *Patroclus montanus* Cr. (P.), (T.) 8,10,18. VII-VIII.
- \* *perluctosus* Pr. (T.) 1. V.
- \* *Exephanes terminalis* Pr. (T.) 10. VII-VIII.
- \* *Pseudamblyteles allapsus* Cr. (P.), (T.) 10,12. VII-VIII.
- \* *animosus rubellus* Cr. (C.), (T.) 3,6,10,12,15. VII-VIII.
- \* *apicalis* Cr. (T.) 3,8,10,15. VI-VII.
- \* *discus* Cr. (C.), ? (T.) 6. VII.
- \* *grotei* Cr. (C.), (T.) 6,10. VII-VIII.

- \* *hudsonicus* Cr. (E.S.) 10,17. VI.
  - \* *mormonus* Cr. (P.) 8,10. VI-VII.
  - \* *nuncius* Cr. (C.) 6. VIII.
  - \* *robustus* Cr. (C.) 10. V.
  - \* *subfuscus* Cr. (C.) 3,6,15. V.
  - \* *suturalis* Say (C.) 3,5,6. V & VII.
  - \* *variegatus* Cr. (C.), (T.) 6,10,15. VII-VIII.
  - \* *Amblyteles aleatorius* Cr. (C.) 1,3,6,10. VIII-IX.
  - \* *improvisus* Cr. (T.) 10. IX.
  - \* *nubivagus* Cr. (C.), (T.) 1,6,15,17. VII-IX.
  - \* *ormenus* Cr. (C.), (T.) 8-10,12,16. V-VII.
  - \* *provancheri* Cush. (P.) 10. VIII.
  - \* *subrufus* Cr. (C.), (T.) 10,12,15. V-VI & X.
  - \* *superbus* Pr. (C.) 10. V & X.
  - \* *Ctenichneumon syphax* Cr. (T.) 15.
  - \* *Tricholabus citatus* Pr. (C.), (T.) 10,12,16. IV-VII.
  - \* *nortoni* Cr. (P.) 10. VI.
  - \* *Pterocormus bimembris* Pr. (P.), (T.) 17. VI.
  - \* *canadensis* Cr. (T.) 10. VIII.
  - \* *cervulus* Pr. (T.) 10. VII.
  - \* *creperus* Cr. (P.), (T.) 10,15. VII-VIII.
  - \* *devinctus* Say (P.), (T.) 10,12. IV-VIII.
  - \* *faciens* Dav. (T.) 10. VII.
  - \* *feralis* Cr. (T.) = *uncinatus* (C.) 10,15. V.
  - \* *funestus* Cr. (T.) 10,17. VI-IX.
  - \* *instabilis* Cr. ? (C.), (T.) 3,10. V & VIII.
  - \* *inurbanus* Cr. (P.) 6,10,15. II & V-VII.
  - \* *lachrymans* Pr. (T.) 1,10. VII-VIII.
  - \* *laetus* Br. (C.) 6,8,10,12,17. VII-IX.
  - \* *lividulus* Pr. (P.) 12. VIII.
  - \* *longulus* Cr. (C.) 3,6,10,15. VII-VIII.
  - \* *maius* Cr. (T.) 10. VII.
  - \* *parvus* Cr. (P.) 10. VIII.
  - \* *pedalis* Cr. (C.) 6,10,12. V & VII-VIII.
  - \* *pictifrons* Cr. (T.) 10. VIII.
  - \* *placidus* Pr. ? (P.), (T.) 3,10. VII-VIII.
  - \* *popofensis* Ash. (T.) 20. VII.
  - \* *putus* Cr. 10.
  - \* *quadrizonatus* Vier. (C.), (T.) 6,21. VII.
  - \* *rufiventris rufiventris* Br. (C.) 3,6,10,12,20. VII-IX.
  - \* *incertus* Cr. (T.) 10. VI.
  - \* *trizonatus* Pr. ? (T.) 10. VII.
  - \* *uncinatus* Cr. (T.) 10,15. V.
  - \* *Coelichneumon ater* Cr. (P.), ? (T.) 10,12,18,21. VI-VII.
  - \* *caeruleus* Cr. (C.), (T.) 10. V-VI.
  - \* *histricus* Cr. (P.) 1. VII.
  - \* *maurus* Cr. (C.) 10,18. VI-VIII.
  - \* *orpheus* Cr. (T.) 10. VII.
  - \* *Protichneumon grandis* Br. (C.), (T.) 6,10. VII-VIII.
  - \* *Conocalama copei* Cr. 6.
  - \* *occidentalis bolteri* Cr. 6,18,19. VII-VIII.
  - \* *Trogus fulvipes* Cr. (P.), (T.) 18. VII.
- Lissonotinae.
- \* *Glypta californica* Pr. ? (C.) 6. VIII.
  - \* *fumiferana* Vier. (T.) 20. VII.



- infumata* Wly. 20. VI.
- \* *inversa* Cr. (T.) 8,10. VI-VIII.
- \* *macra* Cr. (T.) 10,12. VII-VIII.
- \* *rufoscutellaris* Cr. (T.) 2,3,10. V-VI & IX.
- \* *simplicipes* Cr. (T.) 3. VII-IX.
- \* *Amersibia bullata* Dav. (T.) 10. V & IX.
- \* *superba* Pr. (T.) 1,10,12. V-VII.
- \* *Arenetra canadensis* Cr. (T.) 3,10,17. IV & VII.
- vernalis* Wly. (T.) = *nigrita* (C.) 2,3,10. IV.
- \* *Lampronota coloradensis* Cr. (C.), (T.) 6,8,12, 15. VI-VIII.
- scutellaris* Cr. (T.) 10,12. VI-VIII.
- \* *Lissonota laevigata* Cr. (T.) 4. IX.
- montana* Cr. (T.) 1,3,6,10,12,15,21. VII-IX.
- \* *varia* Cr. (T.) = *americana* (C.) 3,4,6,10,12. VII-X.
- \* *gelida* Cr. (C.), (T.) 3,6,10,12,18. VIII-X.
- \* *Pimplopterus frigidus* Cr. (T.) = *exilis* (C.) 8,10,12. VII-IX.
- nigricornis* Pr. (T.) 10. VIII.
- recurvariae* Cush. (T.) 8,10. VI.
- \* *Cryptopimpla jocosa* Cr. (T.) 8,10,17. VI-VII.
- \* *Exetastes abdominalis* Cr. (T.) 10. VII.
- \* *albitarsis* Pr. (T.) 8,10. V-VI.
- angustus* Cush. (T.) 19,20. VII-VIII.
- brevicornis* Cr. 3,6. VII.
- caliginosus* Wly. (T.) 2. IV.
- concoloripes* Cush. 18. VI.
- \* *convergens* Cush. ? (T.) 18. VII.
- \* *crassisculptus* Cush. (T.) 1. VI.
- dilutipes* Cush. 19,21. VII-VIII.
- \* *fascipennis* Cr. (T.) 10. IX.
- \* *illinoiensis* Wlsh. (T.) 6. V.
- \* *nervellus niger* Cr. (T.) 3,10. VII-IX.
- nigribasis* Cush. 19. VII.
- \* *pectinatus* Cush. (T.) 5,18. VII.
- \* *ruficoxalis* Cush. (T.) 2,3,10. VII-VIII.
- \* *rufobalteatus* Cush. (T.) 7,9,10,12,19. VI-VIII.
- scutellaris* Cr. 3. VII-VIII.
- subimpressus* Cush. 18. VII.
- \* *Banchus canadensis* Cr. (T.) 2,10,15. V-VI.
- \* *flavescens* Cr. (C.) (T.) 1-3,6,9,10,12,15,18,21. VI-VIII.
- \* *inermis* Pr. (T.) 9. VI.
- \* *pallescens* Pr. (T.) 10. VI.

#### Mesoleiinae.

- \* *Scolobates auriculatus* Fab. (T.) 10, VI-VIII.
- \* *Euceros medialis* Cr. (T.) 10. VI.
- \* *Trematopygus semirufus* Cr. (C.), (T.) 10,19. V-VII.
- \* *Rhorus varifrons* Cr. (T.) 8,10,17. VI-VII.
- Pion clinatus* Wly. 19. VI.
- \* *fucatus fucatus* Cr. (T.) = *laetus* (C.) 1,10,18. VI-VII.
- \* *Gtenopelma croceum* Wly. (T.) 10. VII.
- nigricorne* Pr. (T.) 1-0. VII.
- \* *sanguineum* Pr. (T.) 1,10,15. VI-VII.
- \* *Xenoschesis cinctiventris* Ash. (T.) 10. VII.
- gracilis* Cush. 19.
- nitidus* Wly. (T.) 10. VI-VII.
- \* *Opheltes glaucopterus flavipennis* Pr. (C.), (T.) 6,10. VIII-IX.

- \* *Perilissus decoloratus* Cr. (T.) 8,10,12,19. VI-VII.
- \* *discolor* Cr. (T.) 20. VII.
- \* *Lathrolestes nasoni* Dav. (T.) 10. VI.
- \* *visscheri* deG. (T.) 10. VI.
- \* *Synoecestes festivus* Cr. (C.), (T.) 10,12. VI-VII.
- \* *Protarchus mellipes* Pr. 10. VIII.
- \* *Himerta atra* Cush. (T.) 10. VII.
- \* *flavida* Dav. (T.) 8,10. VI-VII.
- \* *rubiginosa* Cr. (C.), (T.) 6,10. VI-VII.
- \* *luteifrons* Cr. (T.) 10. VII-VIII.
- \* *Mesoleius canaliculatus* Pr. (T.) = *albotarsatus* (C.) 8,10,17, 20. V-VIII.
- \* *insidiosus* Cr. (T.) 1,8,18. VI.
- \* *nigropictus* Dav. (T.) 10,20. VII-IX.
- \* *notatus* Dav. (T.) 18. VIII.
- \* *picens* Dav. (T.) 8. VI.
- \* *submarginatus* Cr. (T.) 10. VIII.
- \* *tardus* Pr. (T.) 20. VII.
- \* *tarsalis* Cr. (T.) 8. VII.
- \* *vancouverensis* D.T. (T.) = *laetus* (C.) 8. VIII.
- \* *visoris* Dav. (T.) 10. VI-VII.
- \* *Dialges frontalis* Dav. (C.), (T.) 3,10. V-VII.
- \* *tricolor* Dav. (T.) 3. V.
- \* *Syndipnus lateralis* Grav. 10, 19. VI-VII.
- \* *Hypamblys conformis* Wly. (T.) 10. VII.
- \* *Ipoctoninus striatus* Dav. (T.) 10. VI-VIII.
- \* *unicolor* Pr. (T.) 10,20. VII.
- \* *Anisotacrus popofensis* Ash. (T.) 10. VII.
- \* *Hadrodactylus coxatus* Dav. (T.) = *inceptus* (C.) 8,10,12,15. VI-VIII.
- \* *femoratus* Dav. (T.) 10,12. VII-VIII.
- \* *seminiger* Pr. (T.) 9,10,12. VI-VII.
- \* *tibialis* Ash. (T.) 10. VII.
- \* *Euryproctus bituminosus* Dav. (T.) 10. VIII.
- \* *ramis* Dav. (T.) 3, 10. VII-IX.
- Plectiscinae.
- \* *Cylloceria lugubris* Cr. (T.) 10, 15, 19. VI-VIII.
- \* *sexlineata* Say (C.), (T.) 3, 10, 12, 18, 20. VI-VIII.
- Orthocentrinae.
- \* *Orthocentrus pusillus* Wlsh. (T.) 8. VI.,
- Diplazoninae.
- \* *Diplazon laetatorius* Fab. (C.), (T.), 1, 3, 10. V-IX.
- \* *pectoratorius* Th. (T.) = *pulchripes* (C.) 8, 10, 12. V-VIII.
- \* *tetragonus* Th. (C.), (T.) 10. VI-VII.
- \* *tibiatorius* Th. (T.) 3, 6, 10, 20. VII-IX.
- \* *Zootrephus ichneumonoides* Pr. (T.) 4, 10. V-IX.
- \* *rufiventris* Grav. (T.) 10. VII.
- \* *Promethes elongatus* Pr. (T.) = *unicinctus* (C.) 2, 3. VI & VII-IX.
- \* *sulcator* Grav. (T.) 10, 15. VI & IX.
- \* *Syrphoctonus agilis* Cr. (T.) 3. V-VI.
- \* *compressiventris* Cr. (T.) 3, 10. VI.
- \* *humeralis* Pr. (C.), (T.) 3, 6, 10, 15. VI-VIII.
- \* *laevis* Bru. (T.) 12. VIII.
- \* *maculifrons* Cr. (C.), (T.) 3, 6. V-VI.
- \* *minimus* Cr. (T.) 8, 10, 15. V-VIII.
- \* *pectoralis* Pr. (T.) 10. VI.
- \* *pleuralis* Cr. (C.), (T.) 10. VI.
- \* *robustus* Dav. (T.) 10. V.

Metopiinae.

- Metopius* (Clemontia) *pollinctorius* Say (W.) 7. VII.
- \* *Spudaeus indigus* Dav. (T.) 7, 12. VI.
- umbrosus* Dav. (W.) 18. VI.
- Periope aethiops* Cr. (W.) 12. VIII.
- \* *Triclistus fulvipes* Cr. (T.) = *curvator* (V.) 10, 17. VI & VIII.
- \* *pygmaeus* Cr. (T.) 10. V.
- \* *Exochus albifrons* Cr. (T.) 18. VIII.
- atricoxalis* Cr. (W.) 3. IV.

III.

Ophioninae.

- Pyracmon macdunnoughi* Vier. 18, 20. VI-VII.
- separatum* Vier. 20. VII.
- \* *Campoplex albicinctus* Vier. (T.) 10, 15. VI.
- \* *erythromerus* Vier. (T.) 10, 15. VII-VIII.
- hexagonalis* Vier. 3. VII.
- ruficinctum* Vier. 3. VIII.
- \* *rufipes* Pr. (T.) 1, 10. VII-VIII.
- \* *sulcatellus* Vier. (T.) 2, 3, 5, 8, 19. VI-VII.
- uniformis* Vier. 19. VI.
- \* *validus* Cr. (C.) 3, 10, 15. VI-VII.
- \* *Idechthis canescens* Cr. (T.) Bred from *E. kuhniella* 3. I.
- Charops eupitheciae* Vier. (W.) Bred from *E. luteata* 21. II.
- \* *genuina* Nort. (V.), (T.) 19. VI.
- Bathyplectes bryanti* Vier. 10. VII.
- \* *exiguus* Grav. (T.) 3, 15. V-VI.
- \* *Campoletis argentifrons* Cr. (T.) 10. VI.
- \* *atkinsoni* Vier. (T.) 3, 6, 7, 10. V-VII.
- atypicus* Vier. 10.
- \* *australis* Vier. (T.) 3. VI & VIII-IX.
- diversus* Vier. 18. VII.
- \* *flavicinctus* Ash. (T.) 3, 8, 10. V-VII.
- \* *intermedius* Vier. (T.) 3. V-VIII.
- nigricoxus* Vier. 10. VII.
- nigripes* Cr. (T.) 1-4. VIII-IX.
- \* *patsuketorum* Vier. (T.) 4, 10. VII.
- plenus* Pr. 17. VI.
- septentrionalis* Vier. 18, 20. VI-VII.
- \* *tibiator* Cr. (T.) 3, 10. V-VI.
- websteri* Vier. 18. VII.
- Campoplegidea bellula* D.T. 10. VII.
- canadensis* Wly. 17. VI.
- crassicornis* Pr. 10.
- diversa* Nort. 10, 18. VII.
- downesi* Vier. 18. VII.
- fossata* Vier. 10.
- \* *glauca caliginosa* Wly. (W.) 8. VI.
- \* *lapponica kukakensis* Ash. (W.), (T.) 10. VII.
- \* *laticincta* Cr. (W.), (T.) 3, 6, 18, 20. VII.
- major* Cr. (T.) 18. VIII.
- \* *minor* Pr. (W.), (T.) 2, 3, 10, VII-VIII.
- pectoralis* Wly. 10, 15, VII.
- scalaria* Pr. 10. VII.
- \* *seamamnsi* Vier. (T.) 10, 18. VI.
- stricklandi* Vier. 18. VI.
- subtilis* Vier. 19.

- \* *vara* Wly. (T.) 10, 16. VI.
- \* *varicoxa* Vier. (T.) 6, 10, 16. VI-VII.
- \* *villosa* Nort. (C.), (T.) 6, VIII.
- \* *vitticollis* Nort. (T.) 10. VII.
- \* *wyomingensis* Vier. (T.) 10. VI.
- \* *Phobocampe vernalis* Vier 19. V.
- \* *Horogenes albertae* Wly. 12. VII-VIII.
- \* *annulipes* Ash. (T.) 10. VIII.
- \* *insularis* Cr. (T.) 3. VII.
- \* *laticeps* Vier 19. X.
- \* *obscurus* Cr. 19. VI-IX.
- \* *openangorum* Vier. (T.) 10. VI.
- \* *plutellae* Vier. (T.) 6. VIII.
- \* *trachas* Vier. 17. VI.
- \* *Hyposoter annulipes* Cr. (C.), (T.) 3, 6, 18. VII.
- \* *asper* Vier. 18. VII.
- \* *occidentali* Vier. 18. VII.
- \* *pilosulus* Pr. (W.) 3. VI.
- \* *popofensis* Ash. (T.) 10. VI-VII.
- \* *Campoctonus carinatus* Pr. 10. VIII.
- \* *orbitalis* Wly. (T.) 10. VII.
- \* *Olesicampe alaskensis* Ash. (T.) 10. VI & VIII.
- \* *banffensis* Vier. 19. VI.
- \* *lata* Vier. 19. VII.
- \* *mimetica* Vier. 19. VII.
- \* *Pristomerus appalachianus* Vier. (T.) 1-4, 6, 8, 10, 17. VI-IX.
- \* *Zaleptopygus incompletus* Pr. (T.) 3, 15. VI-VII.
- \* *Leptopygus angularis* Pr. (T.) 10, 15. VII.
- \* *Anomalon reticulatum* Cr. (T.) 2, 3. VII-VIII.
- \* *Erigorgus provancheri* D.T. (T.) 10. VI-VIII.
- \* *rufulus* Pr. (T.) 15. V.
- \* *Labrorychus filiformis* Pr. (T.) 10, 15. VII-VIII.
- \* *Atrometus clavipes* Dav. (T.) 7, 10. V-IX.
- \* "Anomalon" *apicale* Cr. (T.) 2. VIII.
- \* *Therion circumflexum* L. (T.) 1, 8, 19. VII-VIII.
- \* *fuscipenne* Nort. (C.), (T.) 1, 8, 19. VII-VIII.
- \* *fuscipenne* Nort. (C.), (T.) 3, 12. VII.
- \* *morio* Fab. (T.) 10. VII.
- \* *Ophion* n. sp. (T.) = *abnormus* (C.) 6. V.
- \* *Enicospilus purgatus* Say (C.) 3, 6. V-VII.

#### Mesochorinae.

- \* *Cidaphus occidentalis* Cush. (T.) 10. VII-VIII.
- \* *Astiphroma strenuum* Holm. (T.) 10. V-VII.
- \* *Mesochorus jucundus* Pr. (T.) = *uniformis* (C.) 10. VI-VII.
- \* *perniciosus* Vier. (T.) 1-3, 6, 10. VI-IX.

#### Unplaced Genera.

- \* *Orthopelma diastrophii* Ash. (T.) 10, 15. VI-VIII.
- \* *mediator* Thbg. (T.) 2. VI.
- \* *ovale* Prov. (T.) Bred from rose gall 10. VI.

#### EVANIIDAE.

- \* *Odontaulacus abdominalis* Cr. (T.) 19. IX.
- \* *editus* Cr. 18. VII.

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